MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for July, 1897, is based on 2,864 reports from stations occupied by regular and voluntary observers, classified as follows: 144 from Weather Bureau stations; numerous special river stations; 33 from post surgeons, received through the Surgeon General, United States Army; 2,525 from voluntary observers; 96 received through the Southern Pacific Railway Company; 14 from Life-Saving stations, received through the Superintendent United States Life-Saving Service; 32 from Canadian stations; 20 from Mexican stations; 7 from Jamaica, W. I. International simultaneous observations are received from a few stations and used together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Government Survey, Honolulu; Dr. Mariano Bárcena, Director of the Central Meteorological Observatory of Mexico; Mr. Maxwell Hall, Government Meteorologist, Kingston, Jamaica; and Commander J. E. Craig, Hydrographer, United States Navy.

The REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the Editor, but the meteorological tables contained in the last section are furnished by Mr. A. J. Henry, Chief of the Division of Records and Meteorological Data.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time, and, as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to generally conform to the modern international system of standard meridians, one hour apart, beginning with Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are generally corrected to agree with the eastern standard; otherwise, the local meridian is mentioned.

CLIMATOLOGY OF THE MONTH.

GENERAL CHARACTERISTICS.

The mean barometric pressure was, as usual in this month, low over the large region extending from Hudson Bay southwest to the head of the Gulf of California, but it was abnormally low especially in the Missouri and upper Mississippi valleys.

The mean temperature was decidedly below the normal in the Rocky Mountain Plateau Region, and above normal in the Lake Region, being respectively the lowest and highest on record at several stations in these districts. Precipitation over a small region in New Hampshire, Vermont, western Massachusetts and Connecticut, eastern New York and New Jersey was in remarkable excess, the unprecedented rainfall of 18 to 20 inches occurring in the center of this area; heavy rain also occurred in the Florida Peninsula and in Minnesota, reaching a maximum of 13 inches between Duluth and St. Paul.

ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers, not reduced to standard gravity, and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart IV. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

The *mean pressure* during the current month was highest over the Bermudas and almost equally high on the coast of Washington. It was lowest in Manitoba and Saskatchewan, and almost equally low in Arizona.

The highest reduced pressures were: In the United States, Tatoosh Island, 30.13; Fort Canby, 30.11; Portland, Oreg., Seattle, and Eureka, 30.08; Key West, 30.06; Tampa, Jupiter, and Charleston, 30.05. In Canada, Bermuda, 30.17; Halifax, 30.07; Yarmouth, 30.06; Sydney, 30.03. The lowest were: In the United States, Yuma and Phœnix, 29.76; Miles City, 29.81; Fresno, 29.82; Williston, Moorhead, and Pierre, 29.83. In Canada, Prince Albert, 29.72; Battleford and Winnipeg, 29.80; Medicine Hat and Qu'Appelle, 29.81; Minnedosa and Calgary, 29.83; Swift Current, 29.84.

As compared with the normal for July, the mean pressure was generally deficient in the Mississippi watershed, the South and Middle Atlantic States, and northward to the British Possessions. It was in excess throughout the Rocky Mountain Plateau Region, New England, and the Canadian Provinces.

The greatest excesses were: In the United States, Eastport, 0.09; Winnemucca, 0.08; Tatoosh Island, 0.06; Fort Canby, Baker City, Helena, Salt Lake City, and Denver, 0.05. In Canada, Halifax, 0.15; Yarmouth and Father Point, 0.13;